Objectives:

This presentation will discuss many types of instructional methods and provide some insight to where they are best utilized. From this presentation you will be able to:

- Explain the importance of using various instructional methods
- Select instructional methods to address certain learning styles
- Identify advantages and challenges of 10 of the 14 listed instructional methods
- Select instructional methods to achieve specific goals
- Utilize several instructional methods in the metadata presentation created for this workshop
- Utilize debriefing sessions to reinforce learning

Instructional Methods:

Advantages	Challenges
Modified lecture	
Typical of computer-based learning. Applies the new-do-review concept. Good for 10-20 size group if other instructional methods are used.	Lecture may reduce application time Activities must be structured and planned
Traditional lecture	
Typically used in education High information volume. Short time frame. Repeat critical concepts. Use high energy activity at beginning. Suitable for groups of 20 or more.	Learning is one-way, passive Require innovation to hold attention. Attention drifts. No feedback.
Brainstorming	
Good ice-breaker. Sparks ideas from others. Develops spirit of congeniality. All ideas are accepted equally. Limit the time for activity. Break from traditional learning/ free thought. Allows adjustment to group and to develop comfort level. Suitable for groups of 10 participants or more. If large group break the group into smaller groups	Possible idea rambling.

Advantages	Challenges

Computer-based training-CBT

Off-line:

- Integrate non-CBT activities
- Allows partnered learning
- Immediate application of knowledge skills and abilities

Machine noise Distractions: games, e-mail/Internet

Software meetings all participant needs

- Logistical constraints- space, connectivity

Internet:

- Assure web sites are related to instructional objectives.
- Demonstrate use, then activity

Demonstration-

Instructor demonstrates/explains new skill/technique.

Allows the participant to observe then Operate the tool

Small or moderate size group with AV.

- Assure all participants have opportunity to hear/see.

Exercises

Instructor presents information/topic,

- Discussion and exercise/activity follows.

Allows participant to apply (practical).

Self-graded exercises allow the 'retiring' participant greater comfort level

This method may be used in a variety of class sizes.

Requires pre-planning to assure learning objectives are met.

Highly active exercises not appropriate for large groups.

Advantages	Challenges
Worksheets/Surveys	
Allows independent activity Allows sharing of information Allows pre-workshop preparation May be used with a variety of learning objectives and group size	Instructor must prepare and prior to workshop
Observation	
Allows learning from other participants. Large groups may be divided to allow effective observation	Observation can be subjective and thus introduces personal issues in measuring learning.
 **Question and Answer**	
Allows further investigation or clarification an issue. Review lengthy topics thoroughly before continuing. Useful for small to large groups.	Unrelated questions should be noted and reserved for later discussion (keep focus) Repeat questions to allow all participants to hear the question and the answer.

Discussion (guided)

Opens with a question
Allows the participant to share experiences.
Effective after video or presentation.
Can be used as a review technique.
Allows participants to share experiences.
Allows passive learners to gain from others experiences.
Works well in moderate to small groups (20 persons or fewer).
Large groups may be divided into smaller groups.

Instructor needs to guard against the overly dominant learner.
Instructor needs to keep time frame in mind.

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Discussions can prolong a session and depending on the topic and emotional character of the topic can distract or derail the focus of the discussion. The discussion periods can become quite lengthy. Return the group back to the materials after a reasonable period has been spent on the issue. Table or 'park' tenacious issues for discussion during break, lunch, or after class.

Question Tips: Questions used in **Question and Answer** and **Directed Discussions** come in many forms. The following are question type examples and an example question.

Closed (yes/no) question:	Do you create metadata?
Presumptive question: (Presumes metadata is created and there are problems.)	What are your obstacles to creating metadata?
Leading question: Negative and presumptive.	Your having problems creating metadata?
Multiple questions:	Are your creating metadata? If so, what are Obstacles? Can we assist you with your problems?
Rambling question:	Metadata? Problems? Help?
Conflict questions: (emotional and negative)	Where is your metadata? Why do you not have metadata?
Hypothetical questions. (problem solving question)	Given the opportunity, how would you …?
Open questions (opens discussions, invites additional information)	Why metadata? Who metadata? When metadata?
Probing questions (seeks further information or clarification)	You have been creating metadata, tell me how it has improved data exchange.
Reflective (a statement requiring response)	This element definition is unclear.

MORE TIPS:

Closed questions begin:	Can… Do… Is… Are… Did…
Open questions begin:	What… Where… When… How… Who…
Probing questions begin:	Why… Why not… How… What…

EXERCISE--- Questions used in a discussion can assist the instructor in determining the level of learning taking place in the presentation. Apply the Levels of Learning (What is Training page10) to these types of questions.

What level of learning are the closed questions?

What level of learning are the open questions?

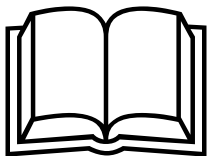
What level of learning are the probing questions?

Why would an instructor want to include all of these questions in a discussion?

Develop a set of questions (two or more) as a method to reinforce learning and to engage the participants in a discussion on a concept(s) in your metadata presentation.

Other Methods. The previous methods are widely used in metadata training. Next are some methods not widely used but can potentially provide an unique and interesting experience.

Readings



Requires the instructor to preview materials
Must be distributed/assigned in advance, but
can be assigned for breaks.
Not all will participate—slow readers
Learning may be measured by providing an outline for the content
and have participants fill in missing information.

Tell a **relevant** story.
Passive learners may decline an active role
Requires time investment by the instructor to develop the roles and provide sufficient background information
May be used with variety of class sizes

Role playing
Can be difficult
Extrovert learners will thrive with this method
Hypothetical situation provides subject for discussion
Experiential learning
Effective with any size audience and knowledge base.

Entertaining, but passive, method of learning.
Maintains attention/Stimulates discussion.
Any knowledge base and group size may benefit from this method, especially useful for very large groups.
Preface the video to point out the objective.

May be difficult to locate a video that sufficiently addresses the concept.
Requires equipment.

Example- NSDI Satellite Conference on Metadata- video shows actors portraying a data documentation situation.

Games

Requires time to develop the concept and game materials.
Instructor provides structure, decides termination point, debriefing.
Allows measuring learning and application.
High participant involvement/ peer learning.
Care should be taken to curb over-competitiveness.
Games:

Metadata jeopardy
Match game

Debriefing- an unobtrusive chat that discusses the instructional method, learning, and obstacles that occurred. It acknowledges the knowledge or skill obtained and reflects on the learning that took place and plans for material changes or adaptations. Debriefing requires an agreement from the participants to maintain a safe environment where the individual is accepted and to allow participants speak openly. Debriefings contain constructive and not personal criticism. The instructor must keep control of the classroom. The debrief brings closure to the exercise. A good ending to the debrief is "Are there comments before we move on?"

The instructor states the:

Debrief purpose.
Object of the exercise.
Needs and expectations of the individual.
Needs and expectations of the group.

Intra-personal issues may arise during an exercise that concern a participant. Acceptance, value, and self-concept issues may appear. Recognize that these issues occur. If the intra-personal issue becomes a deterrent to learning, the instructor may need to take additional actions.

Exercise:

As you are now aware, the instructors have been using a variety of instructional methods in the presentation of these training materials. What have been your experience either using or experiencing instructional methods?

Review:

Use many types of instructional methods to keep training pace varied and active.

Use interactive methods as icebreakers and refreshers at low energy periods.

When using active instructional methods with a large group, divide the group into smaller units, making the activity easier to handle. Smaller groups also allow the 'retiring' participant feel comfortable.

Select the type of instructional method based on learning objectives, venue and characteristics of the audience. Managers have a different purpose and goal than the metadata creators.

Debrief after an exercise to reinforce learning: What happened. Why did it happen? How can this be used? How can this exercise become a better learning tool?.

Exercise:

Develop an instructional method(s) for integration into your metadata module.

Note the following with your method selections:

- The expected audience: managers or metadata creators.
- Reason for using the method-- measure learning, re-energize, etc.
- Estimate the amount of time necessary to conduct the activity.
- Use the questions developed in this module's first exercise for a discussion (instructional method) or to focus the debriefing.